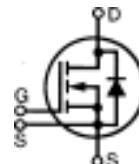


# High Current Power MOSFET

	$V_{DSS}$	$I_{D25}$	$R_{DS(on)}$
<b>IXTN 58N50</b>	<b>500 V</b>	<b>58 A</b>	<b>85 mΩ</b>
<b>IXTN 61N50</b>	<b>500 V</b>	<b>61 A</b>	<b>75 mΩ</b>

N-Channel Enhancement Mode



Preliminary Data

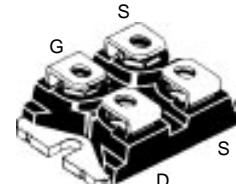
Symbol	Test Conditions	Maximum Ratings		
$V_{DSS}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$	500	V	
$V_{DGR}$	$T_J = 25^\circ\text{C}$ to $150^\circ\text{C}$ ; $R_{GS} = 1.0 \text{ M}\Omega$	500	V	
$V_{GS}$	Continuous	$\pm 20$	V	
$V_{GSM}$	Transient	$\pm 30$	V	
$I_{D25}$	$T_c = 25^\circ\text{C}$	IXTN 58N50 IXTN 61N50	58 61	A
$I_{DM}$	$T_c = 25^\circ\text{C}$ Pulse width limited by $T_{JM}$	IXTN 58N50 IXTN 61N50	232 244	A
$P_D$	$T_c = 25^\circ\text{C}$	625		W
$T_J$		-40 ... +150		°C
$T_{JM}$		150		°C
$T_{stg}$		-40 ... +150		°C
$V_{ISOL}$	50/60 Hz, RMS	$t = 1$ minute $t = 1s$	2500 3000	V~
$M_d$	Mounting torque Terminal connection torque (M4)		1.5/13 Nm/lb.in. 1.5/13 Nm/lb.in.	
Weight		30		g

Symbol	Test Conditions	Characteristic Values		
		( $T_J = 25^\circ\text{C}$ unless otherwise specified)	Min.	Typ.
$V_{DSS}$	$V_{GS} = 0 \text{ V}$ , $I_D = 5 \text{ mA}$	500		V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ , $I_D = 12 \text{ mA}$	1.7		V
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V DC}$ , $V_{DS} = 0$		$\pm 200$	nA
$I_{DSS}$	$V_{DS} = 0.8 V_{DSS}$ $V_{GS} = 0 \text{ V}$	$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	500 2	$\mu\text{A}$ mA
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 0.5 I_{D25}$	58N50 61N50	85 75	mΩ
	Pulse test, $t \leq 300 \mu\text{s}$ , duty cycle $\leq 2 \%$			

miniBLOC, SOT-227 B



E153432



G = Gate

S = Source

Either Source terminal at miniBLOC can be used as Main or Kelvin Source

## Features

- International standard package
- Isolation voltage 3000V (RMS)
- Low  $R_{DS(on)}$  HDMOS™ process
- Rugged polysilicon gate cell structure
- Low drain-to-case capacitance (<100 pF)
  - reduced RFI
- Low package inductance (< 10 nH)
  - easy to drive and to protect
- Aluminium Nitride Isolation
  - increased current ratings

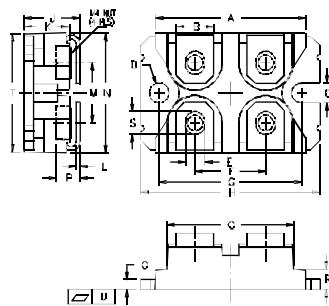
## Applications

- DC choppers
- AC motor speed controls
- DC servo and robot drives
- Uninterruptible power supplies (UPS)
- Switched mode and resonant mode power supplies

## Advantages

- Easy to mount
- Space savings
- High power density

Symbol	Test Conditions	Characteristic Values		
		( $T_J = 25^\circ\text{C}$ unless otherwise specified)		
$g_{fs}$	$V_{DS} = 10 \text{ V}; I_D = 0.5 I_{D25}$ , pulse test	20	30	S
$C_{iss}$ $C_{oss}$ $C_{rss}$	$V_{GS} = 0 \text{ V}, V_{DS} = 25 \text{ V}, f = 1 \text{ MHz}$	11000	pF	
		1550	pF	
		225	pF	
$t_{d(on)}$ $t_r$ $t_{d(off)}$ $t_f$	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = 50 \text{ A}$ $R_G = 1 \Omega$ (External)	30	ns	
		60	ns	
		100	ns	
		50	ns	
$Q_g$ $Q_{gs}$ $Q_{gd}$	$V_{GS} = 10 \text{ V}, V_{DS} = 0.5 V_{DSS}, I_D = I_{D2}$	420	nC	
		55	nC	
		160	nC	
$R_{thJC}$			0.20 K/W	
$R_{thCK}$		0.05	K/W	

**miniBLOC, SOT-227 B**


M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	38.00	38.23	1.496	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004

**Source-Drain Diode**
**Ratings and Characteristics**  
( $T_J = 25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Conditions	Min.	Typ.	Max.
$I_s$	$V_{GS} = 0 \text{ V}$		61	A
$I_{SM}$	Repetitive; pulse width limited by $T_{JM}$		244	A
$V_{SD}$	$I_F = I_S, V_{GS} = 0 \text{ V}$ , Pulse test, $t \leq 300 \mu\text{s}$ , duty cycle $\leq 2 \%$		1.5	V
$t_{rr}$	$I_F = 50 \text{ A}$ , $dI/dt = -100 \text{ A}/\mu\text{s}$ , $V_R = 100 \text{ V}$		800	ns